REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
31-12-2014	FINAL	JULY 2013 - DEC 2014

4. TITLE AND SUBTITLE
TOOLKIT FOR PLANNING AND MANAGING PRESCRIBED AND WILDLAND FIRE SMOKE ON MILITARY INSTALLATION

5a. CONTRACT NUMBER
AGREEMENT NO. W9128F-12-2-0006

5b. GRANT NUMBER
NA

5c. PROGRAM ELEMENT NUMBER
NA

6. AUTHOR(S)
ROBERT MICKLER

5d. PROJECT NUMBER
NA

5e. TASK NUMBER
NA

5f. WORK UNIT NUMBER
NA

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
CAROLINA ECOSYSTEM SERVICES, LLC.
3812 WOODOWL DRIVE
RALEIGH, NC 27613

8. PERFORMING ORGANIZATION REPORT NUMBER
CES-001

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
US ARMY CORPS OF ENGINEERING, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA, NE 68102
PHONE: 402-995-2086

10. SPONSOR/MONITOR'S ACRONYM(S)
COE

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
NA

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES
None

14. ABSTRACT

Natural resource managers have identified smoke management tools for wildfires and prescribed fire as a critical need in minimizing the negative impacts from smoke. Smoke impacts are often in the form of high concentration, short duration events that can significantly impact military operations, human health, and state and national air quality standards, and visibility reductions that present significant roadway safety hazards to military vehicles and the public. This project examines fuel loading, emissions, and smoke dispersion models for the continental US, Alaska, and Hawaii to simulate smoke trajectories/concentrations and recommends a smoke management toolkit comprised of protocols for the management of smoke from prescribed burns and wildfires, fire web resources, and fire training for DoD managers. The project objective is to review and recommend smoke management tools, resources, and training for DoD natural resource managers that support installation testing and training operations, and ensure compliance with mandatory Department of Defense Instructions, State Implementation Plans to achieve the National Ambient Air Quality Standards, and installation Integrated Natural Resource Management Plans. Project deliverables include a comprehensive smoke management guidebook of smoke management tools, wildland fire web resources, and smoke model training resources.

15. SUBJECT TERMS
WILDLAND FIRE, PRESCRIBED FIRE, SMOKE, FIRE BEHAVIOR, EMISSIONS, MILITARY INSTALLATIONS, NATURAL RESOURCE MANAGMENT

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			ROBERT MICKLER
U	U	U	SAR	157	19b. TELEPHONE NUMBER *(Include area code)* 919-673-2176

Reset

Standard Form 298 (Rev. 8/98)
Prescribed by ANSI Std. Z39.18

INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year and be Year 2000 compliant, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.

2. REPORT TYPE. State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.

3. DATES COVERED. Indicate the time during which the work was performed and the report was written, e.g., Jun 1997 - Jun 1998; 1-10 Jun 1996; May - Nov 1998; Nov 1998.

4. TITLE. Enter title and subtitle with volume number and part number, if applicable. On classified documents, enter the title classification in parentheses.

5a. CONTRACT NUMBER. Enter all contract numbers as they appear in the report, e.g. F33615-86-C-5169.

5b. GRANT NUMBER. Enter all grant numbers as they appear in the report, e.g. AFOSR-82-1234.

5c. PROGRAM ELEMENT NUMBER. Enter all program element numbers as they appear in the report, e.g. 61101A.

5d. PROJECT NUMBER. Enter all project numbers as they appear in the report, e.g. 1F665702D1257; ILIR.

5e. TASK NUMBER. Enter all task numbers as they appear in the report, e.g. 05; RF0330201; T4112.

5f. WORK UNIT NUMBER. Enter all work unit numbers as they appear in the report, e.g. 001; AFAPL30480105.

6. AUTHOR(S). Enter name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. The form of entry is the last name, first name, middle initial, and additional qualifiers separated by commas, e.g. Smith, Richard, J, Jr.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES). Self-explanatory.

8. PERFORMING ORGANIZATION REPORT NUMBER. Enter all unique alphanumeric report numbers assigned by the performing organization, e.g. BRL-1234; AFWL-TR-85-4017-Vol-21-PT-2.

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES). Enter the name and address of the organization(s) financially responsible for and monitoring the work.

10. SPONSOR/MONITOR'S ACRONYM(S). Enter, if available, e.g. BRL, ARDEC, NADC.

11. SPONSOR/MONITOR'S REPORT NUMBER(S). Enter report number as assigned by the sponsoring/ monitoring agency, if available, e.g. BRL-TR-829; -215.

12. DISTRIBUTION/AVAILABILITY STATEMENT. Use agency-mandated availability statements to indicate the public availability or distribution limitations of the report. If additional limitations/ restrictions or special markings are indicated, follow agency authorization procedures, e.g. RD/FRD, PROPIN, ITAR, etc. Include copyright information.

13. SUPPLEMENTARY NOTES. Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.

14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.

15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.

16. SECURITY CLASSIFICATION. Enter security classification in accordance with security classification regulations, e.g. U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of this page.

17. LIMITATION OF ABSTRACT. This block must be completed to assign a distribution limitation to the abstract. Enter UU (Unclassified Unlimited) or SAR (Same as Report). An entry in this block is necessary if the abstract is to be limited.